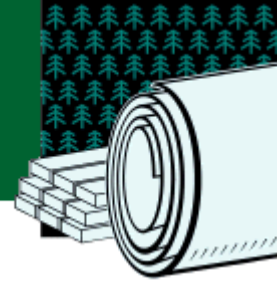


FOREST PRODUCTS

Project Fact Sheet



PROPRIETARY FEASIBILITY STUDY OF A CONTINUOUS PROCESS FOR DISPLACEMENT DEWATERING

BENEFITS

- Reduced raw material costs
- Reduced drying energy costs
- Increased sheet solids
- Higher sheet bulk
- Increased production rates

APPLICATIONS

The Voith Fabrics process replaces current pressing technology used to dewater paper. Pressing writing paper is one particularly promising application, but the process may be applied to all paper types.

New Process to Dewater Paper Can Reduce Thermal Drying Time and Increase Sheet Bulk

By pressing paper to remove water, paper manufacturers reduce energy usage in the subsequent thermal drying step needed to remove remaining water. The current pressing technology uses mechanical pressure to squeeze water from paper. While this method is effective, only small improvements in the drying process are now possible. Furthermore, mechanical compression decreases paper bulk, preventing optimum fiber utilization and increasing raw material needs. Voith Fabrics has developed a new, proprietary press design and membrane, called the BCP, capable of increasing press solids and sheet bulk.

The device combines mechanical and air pressure, pressing paper lightly while forcing air through it. Because increasing sheet solids and sheet bulk are counter to one another, attaining optimal levels for both is not possible. However, the Voith Fabrics process can produce paper that is both drier and bulkier than what is currently available. The process also provides significantly longer dwell times, which increases press speed.



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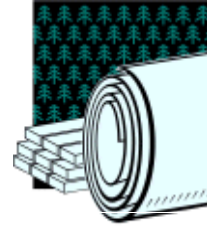
PROJECT DESCRIPTION

Goal: Design and build a pilot-size machine that uses mechanical pressure and air to dewater paper at commercial speeds.

The first phase of the project will focus on equipment design and process validation. Researchers will study and test membrane and seal designs. As progress is made, Voith Fabrics will provide partners with paper samples to be evaluated for their usability. During the second phase, researchers will focus on designing and building the pilot machine. Results from the paper usability tests will be used to optimize the process, and work will continue on membrane, seal, sheet, and endurance testing. The last phase will deal with starting and running the press with the goal of moving the machine to a larger pilot web former to fully test its capabilities.

PROGRESS & MILESTONES

- In November 2000, a lab BCP at Voith Fabrics was pressurized and run without a web at 500 ft/min speeds.
- Patents dealing with the BCP process and related issues are pending.
- Paper samples will be available for evaluation once Phase 1 is completed.
- Researchers will design and test a stand-alone pilot press machine.
- The new technology is expected to save \$2.6 million per year per machine in fiber costs or \$1.5 million per year in energy savings.



PROJECT PARTNERS

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Carol Stream, IL

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Wisconsin Rapids, WI

George A. Whiting Paper Company
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